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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,296	11/19/2001	Ji Hyun Hwang	MRE-0042	8448
34610	7590	04/30/2004	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			TUGBANG, ANTHONY D	
			ART UNIT	PAPER NUMBER
			3729	//

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,296

Applicant(s)

HWANG ET AL.

Examiner

A. Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) 19-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. The applicants' amendment filed 11/24/03 (Paper No. 10) has been fully considered, made of record, and has necessitated the following restriction requirement.
2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 16-18 and 21-25, drawn to a method of transporting one, single printed circuit board, classified in class 29, subclass 832.
 - II. Claims 19, 20 and 26-31, drawn to a method of alternately distributing, transporting or discharging a plurality of circuit boards, classified in class 29, subclass 830.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions of Groups I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (Group I) as claimed does not require the particulars of the subcombination (Group II) as claimed because Group I does not require a plurality of circuit boards, only one single circuit board. The subcombination has separate utility such as distributing and discharging a plurality of circuit boards.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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5. If applicants' elect the invention of Group I, then a further restriction to one of the following inventions is required under 35 U.S.C. 121:

I-A. Claims 17 and 18, drawn to discharging a printed circuit board, classified in class 29, subclass 429.

I-B. Claim 21, drawn to lifting and lowering the circuit board, classified in class 29, subclass 832.

I-C. Claims 22-25, drawn to transferring the circuit board with transfer or conveyor rollers, classified in class 29, subclass 33P.

The inventions are distinct, each from the other because of the following reasons:

6. Inventions of Groups I-A, I-B and I-C are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, the inventions of Groups I-A, I-B, and I-C each have separate utility as recited above. See MPEP § 806.05(d).

7. Claim 16 link(s) the inventions of Groups I-A, I-B and I-C. The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim(s), claim 16. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant

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application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

8. Because these inventions are distinct for the reasons given above and the search required for Group I-A is not required for Group I-B and I-C, the search required for Group I-B is not required for Groups I-A and I-C, and the search required for Group I-C is not required for I-B and I-A. Consequently, the restriction for examination purposes as indicated is proper.

9. Newly submitted Claims 21-31, as well as amended Claims 19 and 20, are directed to an invention that is independent or distinct from the invention originally claimed for the reasons set forth above.

Since applicants' have received an action on the merits for the originally presented invention, i.e. Group I-A, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 19-31 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Burt et al 5,812,693.

Burt discloses a surface mounting method comprising: transporting a printed circuit board 30 on a first multi-layer transfer unit (rework system 40) to a first conveyor 43;

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discharging the printed circuit board carried from the first conveyor 43 to a second multi-layer transfer unit (PC board buffer unit 41); transporting the printed circuit board loaded on the second multi-layer transfer unit 41 to a second conveyor 49; and discharging the printed circuit board carried from the second conveyor 49 to the first multi-layer transfer unit 40 (shown in Fig. 4). All of the steps above are controlled by the use of controller (computer discussed at col. 3, lines 23+).

Regarding Claim(s) 17, Burt further teaches that the discharging of the printed circuit board from the first conveyor 43 to the second multi-layer transfer unit 41 under the controller further comprises discharging the printed circuit board from the first conveyor 43 to the second multi-layer transfer unit 41 in a state that parts (components) are *not mounted* under control of the controller, but are awaiting parts to be subsequently mounted at a later time (see col. 1, lines 13-15).

Regarding Claim(s) 18, Burt alternatively teaches that discharging the printed circuit board from the second conveyor to the first multi-layer transfer unit under control of the controller further comprises discharging the printed circuit board from the second conveyor 49 to the first multi-layer transfer unit 40 in a state that parts (components) are *not mounted* under control of the controller, but are awaiting parts to be subsequently mounted at a later time (see col. 1, lines 13-15).

Response to Arguments

12. Applicant's arguments filed 11/24/03 (Paper No. 10, pages 15-16) have been fully considered, but have not been deemed to be found as persuasive.

In regards to the merits of Burt et al, the applicants' appear to arguing that Burt does not satisfy all of the limitations of at least Claim 16 because Burt is silent on the source of the printed circuit boards to be inspected by the image acquisition unit 48. Thus, Burt does not meet the limitations of "transporting a printed circuit board loaded on the first multi-layer transfer unit" (lines 2-3 of Claim 16) and "discharging the printed circuit board from the second conveyor to the first multi-layer transfer unit" (lines 8-9 of Claim 16).

The examiner most respectfully disagrees. The claimed "multi-layer transfer unit" in Burt was read as the entire rework system 40 and the claimed "first conveyor" and "second conveyors" were read as conveyor 43 and conveyor 49, respectively. Clearly from the arrow paths of Burt's Figure 4, one, single circuit board moves in a direction that is transported or loaded onto a first multi-layer transfer unit (rework system 40) from or to the first conveyor 43. Based upon the inspection of the circuit board to find any so called fault errors (see col. 4, lines 60-66), the circuit board is shuttled, returned or discharged from the second conveyor 49 to the first multi-layer transfer unit 40. How the inspection of the circuit board occurs is insignificant because what is relied upon in Burt, is the path that the circuit board travels between the rework system 40 and the conveyors 43, 49, and not how the circuit board is inspected.

It is noted that the features upon which applicant relies (i.e., inspecting of the printed circuit board) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to the applicants' arguments drawn to independent Claims 19 and 27, these arguments are considered to be moot, since these claims are now non-elected as being directed to an invention that is distinct and separate for the reasons set forth above.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

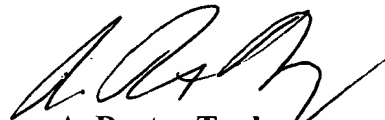
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 703-308-7599. The examiner can normally be reached on Monday - Friday 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



A. Dexter Tugbang
Primary Examiner
Art Unit 3729

April 29, 2004